

Smad1 (913C1b): sc-81378

BACKGROUND

Smad proteins, the mammalian homologs of the *Drosophila* Mothers against dpp (Mad) have been implicated as downstream effectors of TGF β /BMP signaling. Smad1 (also designated Madr1 or JV4-1), Smad5 and mammalian Smad8 (also designated Smad9 or MADH6) are effectors of BMP2 and BMP4 function while Smad2 (also designated Madr2 or JV18-1) and Smad3 are involved in TGF β and Activin-mediated growth modulation. Smad4 (also designated DPC4) has been shown to mediate all of the above activities through interaction with various Smad family members. Smad6 and Smad7 regulate the response to activin/TGF β signaling by interfering with TGF β -mediated phosphorylation of other Smad family members.

REFERENCES

1. Eppert, K., et al. 1996. MADR2 maps to 18q21 and encodes a TGF β -regulated MAD-related protein that is functionally encoded in colorectal carcinoma. *Cell* 86: 543-552.
2. Liu, F., et al. 1996. A human Mad protein acting as a BMP-regulated transcriptional activator. *Nature* 381: 620-623.
3. Zhang, Y., et al. 1996. Receptor-associated Mad homologues synergize as effectors of the TGF β response. *Nature* 383: 168-172.
4. Lagna, G., et al. 1996. Partnership between DPC4 and Smad proteins in TGF β signalling pathways. *Nature* 383: 832-836.

CHROMOSOMAL LOCATION

Genetic locus: SMAD1 (human) mapping to 4q31.21; Smad1 (mouse) mapping to 8 C2.

SOURCE

Smad1 (913C1b) is a mouse monoclonal antibody raised against a recombinant protein corresponding to an internal region of Smad1 of human origin.

PRODUCT

Each vial contains 50 μ g IgG₁ in 0.5 ml of PBS with < 0.1% sodium azide and 1.0% stabilizer protein.

APPLICATIONS

Smad1 (913C1b) is recommended for detection of Smad1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)] and flow cytometry (1 μ g per 1 x 10⁶ cells).

Suitable for use as control antibody for Smad1 siRNA (h): sc-29483, Smad1 siRNA (m): sc-36507, Smad1 siRNA (r): sc-63289, Smad1 shRNA Plasmid (h): sc-29483-SH, Smad1 shRNA Plasmid (m): sc-36507-SH, Smad1 shRNA Plasmid (r): sc-63289-SH, Smad1 shRNA (h) Lentiviral Particles: sc-29483-V, Smad1 shRNA (m) Lentiviral Particles: sc-36507-V and Smad1 shRNA (r) Lentiviral Particles: sc-63289-V.

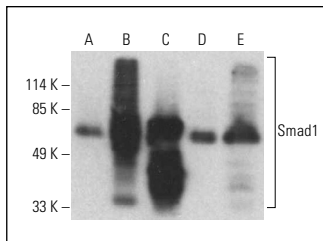
Molecular Weight of Smad1: 52-56 kDa.

Positive Controls: Smad1 (h): 293T Lysate: sc-171449, HEK293 whole cell lysate: sc-45136 or NIH/3T3 whole cell lysate: sc-2210.

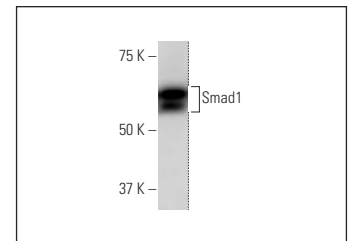
STORAGE

For immediate and continuous use, store at 4° C for up to one month. For sporadic use, freeze in working aliquots in order to avoid repeated freeze/thaw cycles. If turbidity is evident upon prolonged storage, clarify solution by centrifugation.

DATA



Smad1 (913C1b): sc-81378. Western blot analysis of Smad1 expression in non-transfected 293T: sc-117752 (A), human Smad1 transfected 293T: sc-171449 (B), human Smad1 transfected 293T (C), Hep G2 (D) and NIH/3T3 (E) whole cell lysates.




Smad1 (913C1b): sc-81378 Western Blot analysis of Smad1 expression in HEK293 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Tang, S., et al. 2010. Trigenic neural crest-restricted Smad7 over-expression results in congenital craniofacial and cardiovascular defects. *Dev. Biol.* 344: 233-247.
2. Nolan-Stevaux, O., et al. 2012. Endoglin requirement for BMP9 signaling in endothelial cells reveals new mechanism of action for selective anti-endoglin antibodies. *PLoS ONE* 7: e50920.
3. Yamamoto, R., et al. 2013. Clinically applicable antiangiogenic agents suppress osteoblastic transformation of myogenic cells and heterotopic ossifications in mice. *J. Bone Miner. Metab.* 31: 26-33.
4. Beaudoin, M.S., et al. 2014. Novel effects of rosiglitazone on Smad2 and Smad3 signaling in white adipose tissue of diabetic rats. *Obesity* 22: 1632-1642.
5. Ardelean, D.S., et al. 2014. Endoglin and activin receptor-like kinase 1 heterozygous mice have a distinct pulmonary and hepatic angiogenic profile and response to anti-VEGF treatment. *Angiogenesis* 17: 129-146.
6. Wu, P., et al. 2017. Negative regulation of Smad1 pathway and collagen IV expression by store-operated Ca²⁺ entry in glomerular mesangial cells. *Am. J. Physiol. Renal Physiol.* 312: F1090-F1100.
7. Huang, M., et al. 2018. Multiple roles of epithelial heparan sulfate in stomach morphogenesis. *J. Cell Sci.* 131: jcs210781.

RESEARCH USE

For research use only, not for use in diagnostic procedures.



See **Smad1 (A-4): sc-7965** for Smad1 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.